

APPENDIX C
General Biological Resources Report

General Biological Resources

San Pasqual Undergrounding Project

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Prepared for:
City of Escondido
Vista Irrigation District
Bureau of Indian Affairs

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Contents

1.0	Summary	1
2.0	Introduction	1
3.0	Project Description	1
3.1	Project Location	4
3.2	Land Use, Topography, Weather	4
4.0	Methods.....	4
4.1	Pre-Survey Investigation	4
4.2	General Biological Surveys.....	5
5.0	Results.....	5
5.1	General Biology.....	5
5.2	Sensitive Biological Resources	10
6.0	Impact Analysis	14
6.1	Special Status Species	14
6.2	Sensitive Natural Communities.....	15
6.3	Wetlands.....	17
6.4	Wildlife Corridors.....	18
6.5	Habitat Conservation Plans & Local Policies or Ordinances	18
7.0	Mitigation, Monitoring, and Reporting.....	19
8.0	References	25

Tables

Table 1	Vegetation Acreages within the Study Area.....	7
Table 2	Animal Species Observed	8
Table 3	Special Status Animal Species Known or with Potential to Occur in the Study Area.....	12
Table 4	Maximum Temporary Impacts from Pipeline Construction.....	16
Table 5	Potential Temporary and Permanent Impacts from Construction of the On-Reservation Desilting Basin and Access Road (Proposed Project)	16
Table 6	Potential Temporary and Permanent Impacts from Construction of Off-Reservation Desilting Basin Alternative and Access Road.....	17

Figures

Figure 1	Regional Location	2
Figure 2	Overview of the Proposed Project	3
Figure 3	Soil Types in the Study Area	6

Abbreviations

BIA	Bureau of Indian Affairs
CDFW	California Department of Fish and Wildlife
CFG	California Fish and Game
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CWA	Clean Water Act
MSCP	Multiple Species Conservation Plan
NCCP	Natural Community Conservation Planning
OHWM	Ordinary High Water Mark
RWQCB	Regional Water Quality Control Board
SANDAG	San Diego Association of Governments
San Pasqual Band	San Pasqual Band of Mission Indians
SDNHM	San Diego Natural History Museum
SSC	Species of special concern
U.S.	United States
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Services
USGS	U.S. Geological Survey
VID	Vista Irrigation District

1.0 Summary

Atkins completed a general biological survey and report for the San Pasqual Undergrounding Project (proposed project). The biological resources study area for the proposed project consists of the proposed pipeline alignment, desilting basins and access roads, the existing Escondido Canal within the San Pasqual Reservation, and a 50 foot buffer on each side of the project components or a 100-foot wide construction corridor (also referred to as the survey area) (Figures 1 and 2). Atkins' biologists conducted surveys between February and July, 2016. This Biological Resources General Survey Report provides an inventory of existing biological conditions on and in the immediate vicinity of the study area.

2.0 Introduction

On behalf of the City of Escondido (Escondido), Vista Irrigation District (VID), and the Bureau of Indian Affairs (BIA), Atkins conducted biological surveys within the study area located on the San Pasqual Reservation and on San Diego County land in the community of Valley Center (Figures 1 and 2).

3.0 Project Description

The proposed project is an integral component of the San Luis Rey Indian Water Rights Settlement Agreement (January 30, 2015) including the United States (acting through the Secretary of the Interior and the Attorney General of the United States); the La Jolla, Rincon, San Pasqual, Pauma, and Pala Bands of Mission Indians; the San Luis Rey Indian Water Authority; Escondido; and VID (referred to as the Settlement Parties). The water historically developed and used by the Settlement Parties consists of a combination of imported water delivered by the San Diego County Water Authority and various local water supplies.



Canal with flowing water

The proposed project would decommission, relocate, or replace about two and a half miles of the Escondido Canal that crosses the San Pasqual Reservation (Figure 2).

The proposed project consists of four primary elements: 1) the construction of a new desilting basin and associated access road on the San Pasqual Indian Reservation along the existing Escondido Canal alignment where the canal first enters the Reservation; 2) the replacement of about 2,000 feet of existing canal with a buried 60-inch pipeline within the existing Escondido Canal ROW; 3) the replacement of another approximately 2 miles of existing canal with a buried 60-inch pipeline within new alignments crossing the San Pasqual Indian Reservation, private lands, and public ROW in Lake Wohlford Road; and 4) the removal of approximately 2 miles of the existing Escondido Canal that are dewatered when the proposed project is complete, and the reclamation of the land formerly occupied by the canal by means of demolition, debris removal, grading, and reestablishment of drainage, as well as any associated mitigation of environmental impacts that may be required. The connection to the existing underground pipeline would be at a location south of Paradise Mountain Road. No pumping would be required to convey flows through the proposed underground pipeline.

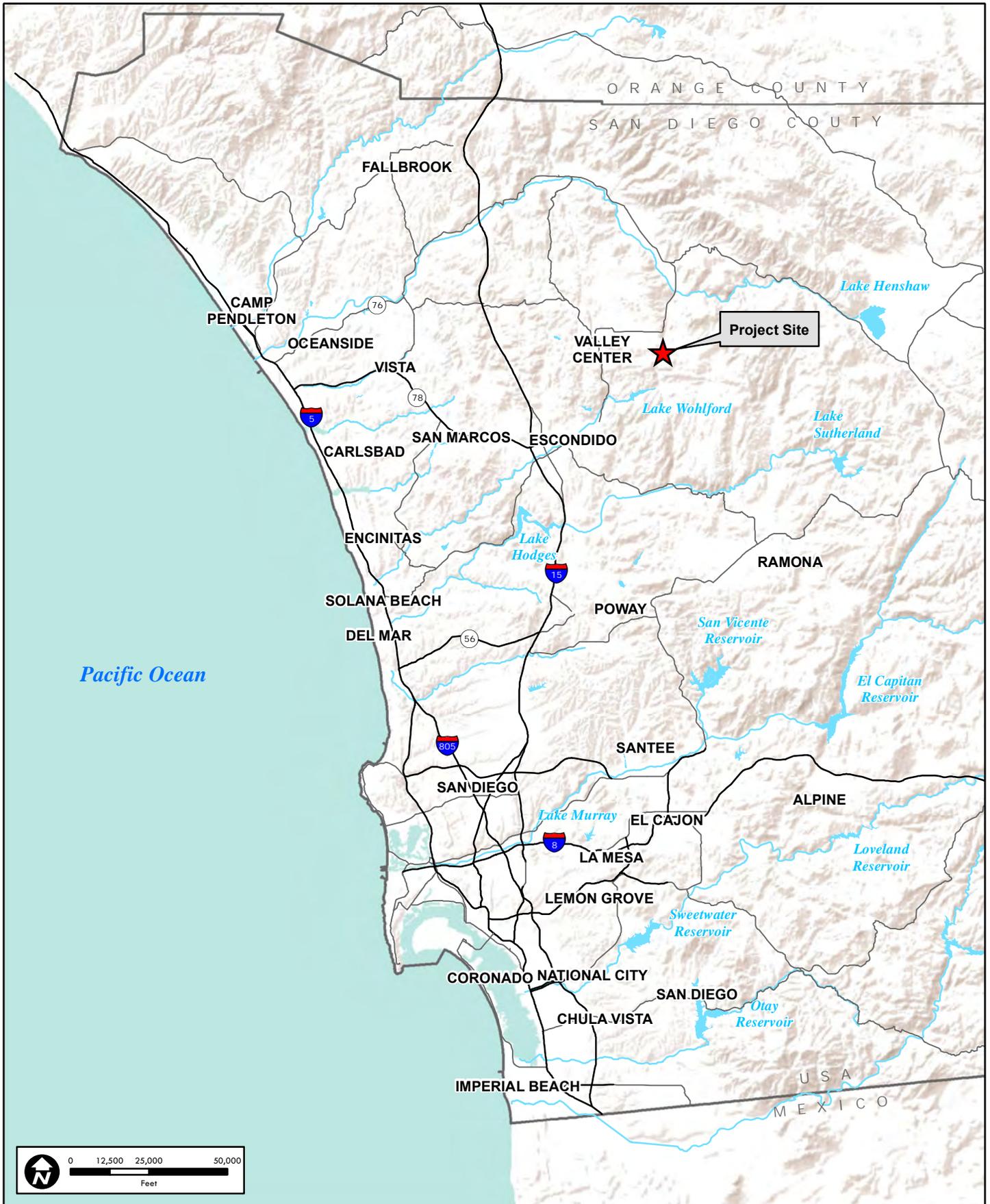
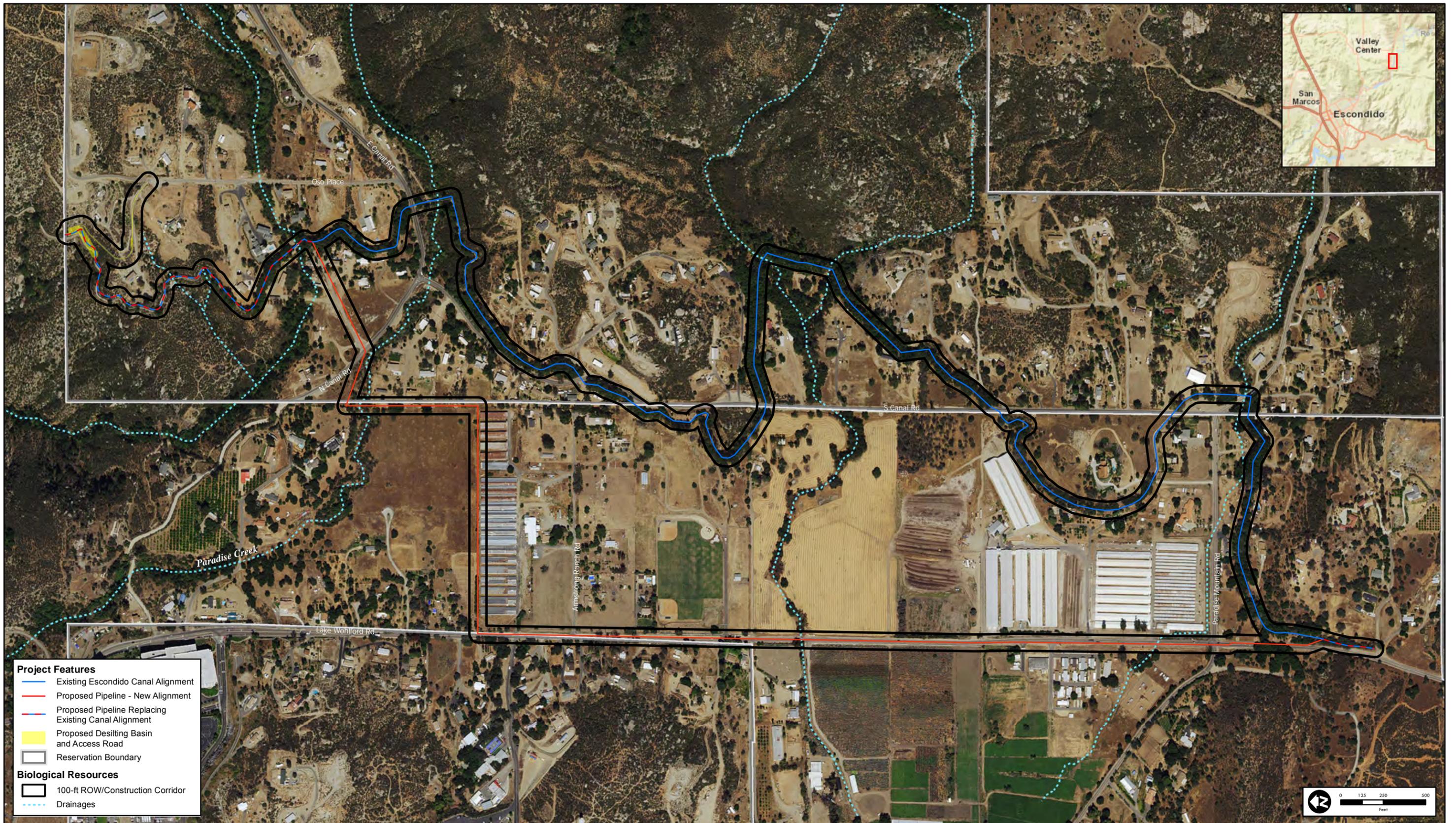


Figure 1
Regional Location





Project Features

- Existing Escondido Canal Alignment
- Proposed Pipeline - New Alignment
- Proposed Pipeline Replacing Existing Canal Alignment
- Proposed Desilting Basin and Access Road
- Reservation Boundary

Biological Resources

- 100-ft ROW/Construction Corridor
- Drainages



Figure 2
Overview of the Proposed Project
 100049195 2016 San Pasqual Undergrounding Project

3.1 Project Location

The study area is located on the San Pasqual Reservation and on San Diego County land in the community of Valley Center, approximately 5 miles northeast of the city of Escondido (Figure 1). This location corresponds to Sections 15 and 22 in Township 11 South, Range 1 West of the Rodriguez Mountains U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles.

The study area is located within USGS Hydrological Unit Code 18070303 named San Luis Rey-Escondido watershed (EPA 2014).

3.2 Land Use, Topography, Weather

The study area currently consists of Lake Wohlford Road, South Canal Road, an unnamed dirt road, Escondido Canal, San Diego County and San Pasqual Reservation developed and undeveloped land, and San Diego North County Multiple Species Conservation Plan (MSCP) Preserve land (Hellhole Canyon). Surrounding lands are a combination of residential and agricultural land. This location corresponds to the South Coast Subregion of the California Floristic Province (Baldwin et al. 2012).

The elevation of the study area is approximately 1,600 to 1,700 feet above mean sea level. Topography in the vicinity of the study area is characterized as uplands and low hills. Local terrain within the study area consists of generally flat to slightly sloping upland.

San Diego County has a Mediterranean climate with cool, wet winters and warm, dry summers. The average total precipitation in Escondido is 14.98 inches. Rainfall is generally the heaviest between January and March with precipitation ranging 2.64 to 3.43 inches. Rain is normally infrequent during summer months, with precipitation ranging 0.08 to 0.20 inch.

The average annual temperature is approximately 65 degrees Fahrenheit for Escondido. Summer temperatures range from 58 to 89 degrees Fahrenheit and winter temperatures range from 42 to 74 degrees Fahrenheit.

4.0 Methods

4.1 Pre-Survey Investigation

Prior to conducting field surveys, a thorough review of available relevant maps, databases, and literature pertaining to biological resources known to occur in the study area was performed. Aerial imagery (Google Earth 2016), topographic maps (USGS 2016), soils maps (USDA 2016), vegetation maps (City of San Diego 1997), SANDAG 2016), national wetland inventory (USFWS 2016), and other maps of the study area were acquired and reviewed to obtain updated information on the natural environmental setting. In addition, a query of sensitive species and habitat databases was conducted, including the California Natural Diversity Database (CNDDB) (CDFW 2016a), the California Native Plant Society (CNPS) Electronic Inventory (CNPS 2016), San Diego Natural History Museum (SDNHM) Plant Atlas (SDNHM 2016), and the Consortium of California Herbarium (Consortium 2016) applications, as well as a review of regional lists produced by the USFWS (2016) and CDFW (2016b and 2016c).

The pre-survey investigation also included a verification of whether or not the study area falls in areas designated as final or proposed USFWS Critical Habitat for federally threatened or endangered species

(USFWS 2016), as well as areas designated as the City of San Diego Multi-Habitat Planning Area for the MSCP Subarea Plan (SANDAG 2016).

4.2 General Biological Surveys

Field surveys were conducted in the study area from February to July, 2016. As described above, the study area consists of the proposed pipeline alignment, two desilting basins and access roads, the existing Escondido Canal within the San Pasqual Reservation, and a 50 feet buffer on each side of the project components or a 100-foot wide construction corridor. Surveys were conducted by qualified Atkins biologists.

The surveys included a general inventory of existing conditions and focused surveys. Focused surveys included vegetation community mapping, a wetland delineation, coastal California Gnatcatcher (CAGN) (*Polioptila californica californica*) protocol surveys, least Bell's vireo (LBVI) (*Vireo bellii pusillus*) protocol surveys, and rare plant surveys. Individual reports are provided separately for the focused surveys and include specific methods for each focused survey (Atkins 2016a-d).

5.0 Results

5.1 General Biology

The general biology section consists of soils, vegetation communities, hydrology, and wildlife within the study area.

5.1.1 Soils

Eight soil types have been mapped within the study area:

1. Cieneba very rocky coarse sandy loam (CmrG; 30 to 75 percent slopes),
2. Fallbrook-Vista Sandy loam (FvD; 9 to 15 percent slopes)
3. Fallbrook-Vista sandy loams (FvE; 15 to 30 percent slopes),
4. Fallbrook sandy loam (FaC2; 5 to 9 percent slopes; eroded),
5. Fallbrook sandy loam (FaD2; 9 to 15 percent slopes; eroded),
6. Placentia sandy loam (PeC; 2 to 9 percent slopes),
7. Ramona Sandy loam (RaD2; 9 to 15 percent slopes), and
8. Visalia sandy loam (VaB; 2 to 5 percent slopes; Bowman 1973).

Figure 3 presents the location of the soil types in the study area. These soil types are described in more detail in the Rare Plant Report (Atkins 2016a).

5.1.2 Vegetation Communities

The study area consists of the following seven sensitive vegetation communities and four disturbed/developed areas: coast live oak woodland, Engelmann oak woodland, eucalyptus woodland, southern willow scrub, coastal sage scrub (Diegan), southern mixed chaparral, and non-native grassland (Hollands 1986; Oberbauer et al. 2008). Vegetation mapping within the study area, descriptions of the vegetation communities, and a full plant list is included in the Rare Plant Report (Atkins 2016a). Table 1 provides acreages of vegetation within the entire study area and within the construction corridor for each of the project components.

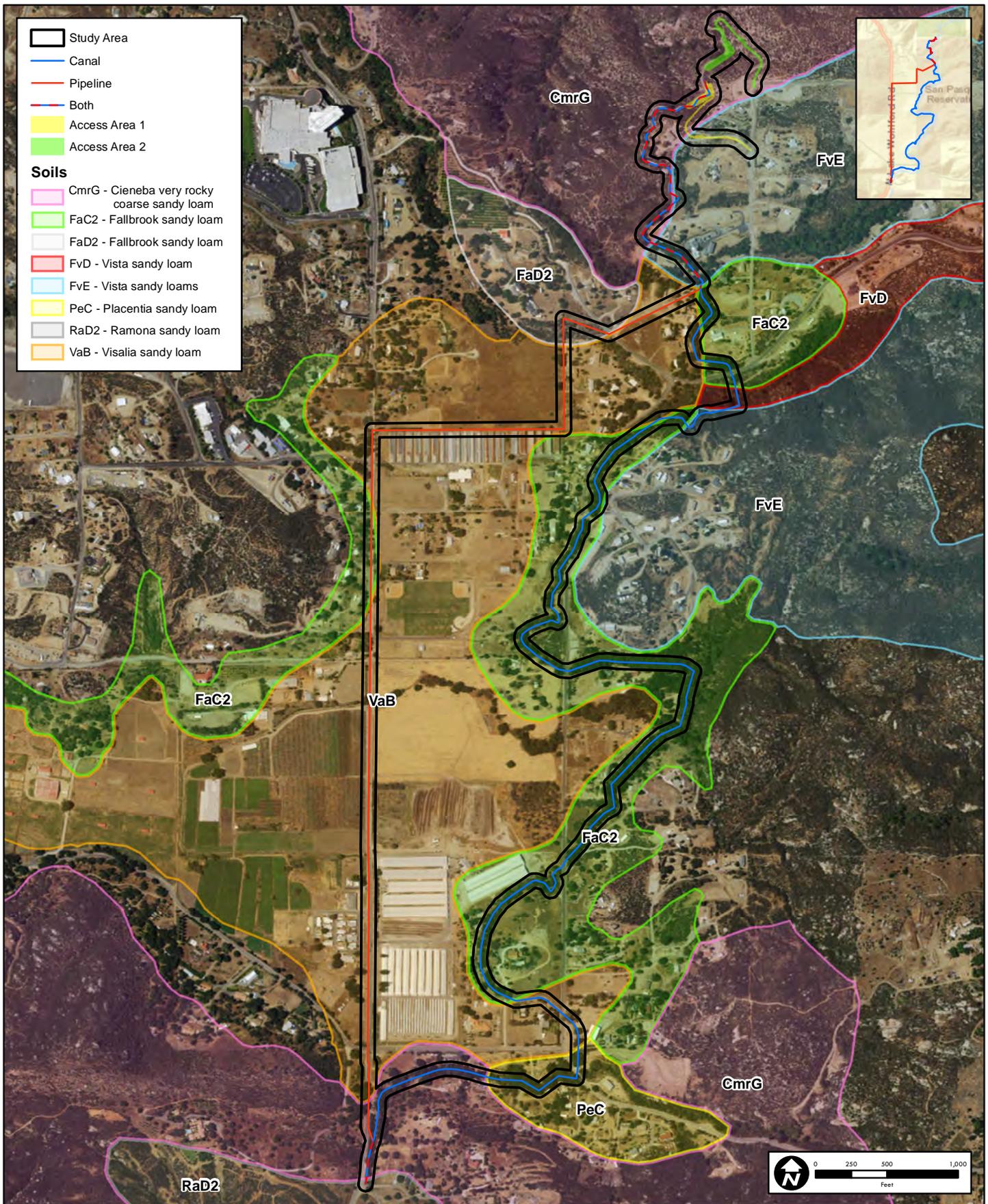


Figure 3
Soil Types in the Study Area

Table 1 Vegetation Acreages within the Study Area

Vegetation Communities	Acreage				Total Study Area
	Pipeline	Desilting A	Desilting B	Canal	
Woodlands					
Coast Live Oak Woodland	2.66	-	-	17.74	20.40
Engelmann Oak Woodland	0.27	-	-	-	0.27
Eucalyptus Woodland	0.41	-	-	0.33	0.74
<i>Subtotal</i>	<i>3.34</i>	<i>0</i>	<i>0</i>	<i>18.07</i>	<i>21.41</i>
Riparian					
Southern Willow Scrub	0.22	-	-	0.16	0.38
Shrublands					
Coastal Sage Scrub (Diegan)	0.23	0.40	-	0.40	1.03
Southern Mixed Chaparral	3.31	0.69	2.80	0.87	7.67
<i>Subtotal</i>	<i>3.54</i>	<i>1.09</i>	<i>2.80</i>	<i>1.27</i>	<i>8.70</i>
Grasslands					
Non-native Grassland	2.73	-	-	1.90	4.63
Disturbed/Developed					
Agriculture	1.25	-	-	-	1.25
Ornamental	1.18	-	-	-	1.18
Disturbed	4.67	0.34	-	1.60	6.61
Developed	7.71	0.62	0.34	2.05	10.72
<i>Subtotal</i>	<i>14.81</i>	<i>0.96</i>	<i>0.34</i>	<i>3.65</i>	<i>19.76</i>
Total	24.65	2.05	3.13	25.05	54.88

The majority of the study area bordering the existing canal is oak woodland. The majority of the study area where the proposed underground pipeline alignment occurs is within developed areas including paved roads. The majority of the proposed desilting basin and access road footprints are comprised of Southern mixed chaparral. The proposed desilting basin and access road footprints also include the existing canal and disturbed access paths and dirt roads.

5.1.3 Hydrology

The San Luis Rey River flows approximately 55 miles from its headwaters in the Palomar and Hot Springs Mountains, crosses northern San Diego County, and eventually flows through the coastal town of Oceanside where it meets the Pacific Ocean. The San Luis Rey River watershed includes an area of approximately 562 square miles. Drainage of the study area occurs through surface runoff into ditches and drainages that flow into Paradise Creek or Moosa Creek that both flow into the San Luis Rey River. Some drainage from the study area also flows into the Escondido Canal.

5.1.4 General Wildlife

One amphibian, four reptiles, 54 birds, and seven mammal species were observed or otherwise detected by call or sign in the study area during the general biological surveys (Table 2). Additional information on wildlife observed during surveys is included in the LBVI and CAGN reports (Atkins 2016c, 2016d) and below in Section 5.2.3 (Special Status Species).

Table 2 Animal Species Observed

Scientific Name	Common Name
AMPHIBIANS	
Hylidae <i>Pseudacris hypochondriaca</i>	Treefrogs Baja California chorus frog
REPTILES	
Phrynosomatidae <i>Sceloporus occidentalis longipes</i> <i>Uta stansburiana elegans</i>	Lizards Great Basin fence lizard California side-blotched lizard
Teiidae <i>Aspidoscelis hyperythra beldingi</i>	Whiptails and Racerunners Orange-throated whiptail (SSC)
Viperidae <i>Crotalus oreganus helleri</i>	Vipers Southern Pacific rattlesnake
BIRDS	
Accipitridae <i>Accipiter cooperii</i> <i>Buteo jamaicensis</i> <i>Buteo lineatus</i>	Hawks Coopers' hawk (SSC) red-tailed hawk red-shouldered hawk (SSC)
Aegithalidae <i>Psaltriparus minimus</i>	Bushtits bushtit
Apodidae <i>Aeronautes saxatalis</i>	Swallows white-throated swift
Ardeidae <i>Bubulcus ibis</i>	Hérons Cattle egret
Bombycillidae <i>Bombycilla cedrorum</i>	Waxwings cedar waxwing
Cardinalidae <i>Pheucticus melanocephalus</i> <i>Piranga ludoviciana</i>	Cardinals black-headed grosbeak Western tanager
Cathartidae <i>Cathartes aura</i>	Buzzards Turkey vulture (SSC)
Columbidae <i>Streptopelia decaocto</i> <i>Zenaida macroura</i>	Pigeons Eurasian collared dove mourning dove
Corvidae <i>Aphelocoma californica</i> <i>Corvus brachyrhynchos</i> <i>Corvus corax</i>	Jays and Crows western scrub-jay American crow common raven
Emberizidae <i>Chondestes grammacus</i> <i>Junco hyemalis</i> <i>Melospiza melodia</i> <i>Pipilo crissalis</i> <i>Pipilo maculatus</i> <i>Zonotrichia leucophrys</i>	Passerines lark sparrow dark-eyed junco song sparrow California towhee spotted towhee white-crowned sparrow
Falconidae <i>Falco sparverius</i>	Falcons American kestrel
Fringillidae <i>Carduelis psaltria</i> <i>Carpodacus mexicanus</i>	Finches lesser goldfinch house finch

Table 2 Animal Species Observed

Scientific Name	Common Name
Icteridae <i>Euphagus cyanocephalus</i> <i>Icterus bullockii</i> <i>Icterus cucullatus</i> <i>Molothrus ater</i>	Orioles, Blackbirds, and Cowbirds Brewer's blackbird Bullock's oriole Hooded oriole brown-headed cowbird
Mimidae <i>Mimus polyglottos</i> <i>Toxostoma redivivum</i>	Mockingbirds and Thrashers Northern mockingbird California thrasher
Odontophoridae <i>Callipepla californica</i>	Quails California quail
Paridae <i>Baeolophus inornatus</i>	Tits, Chickadees, and Titmice oak titmouse
Parulidae <i>Dendroica coronata</i>	New World Warblers yellow-rumped warbler
Passeridae <i>Passer domesticus</i>	Old World Sparrows house sparrow*
Picidae <i>Colaptes auratus</i> <i>Melanerpes formicivorus</i> <i>Picoides nuttallii</i>	Woodpeckers Northern flicker acorn woodpecker Nuttall's woodpecker
Poliophtilidae <i>Poliophtila caerulea</i>	Gnatcatchers blue-gray gnatcatcher
Ptiliognatidae <i>Phainopepla nitens</i>	Silky Flycatchers Phainopepla
Regulidae <i>Regulus calendula</i>	Kinglets ruby-crowned kinglet
Sittidae <i>Sitta carolinensis</i>	Nuthatches white-breasted nuthatch
Sturnidae <i>Sturnus vulgaris</i>	Starlings European starling*
Sylviidae <i>Chamaea fasciata</i>	Old World Warblers wrentit
Trochilidae <i>Calypte anna</i> <i>Calypte costae</i>	Hummingbirds Anna's hummingbird Costa's hummingbird
Troglodytidae <i>Thryomanes bewickii</i>	Wrens Bewick's wren
Turdidae <i>Sialia mexicana</i> <i>Turdus migratorius</i>	Thrushes western bluebird (SSC) American robin
Tyrannidae <i>Myiarchus cinerascens</i> <i>Sayornis nigricans</i> <i>Sayornis saya</i> <i>Tyrannus verticalis</i> <i>Tyrannus vociferans</i>	Tyrant Flycatchers ash-throated flycatcher black phoebe Say's phoebe western kingbird Cassin's kingbird
Vireonidae <i>Vireo huttoni</i>	Vireos Hutton's vireo

Table 2 Animal Species Observed

Scientific Name	Common Name
MAMMALS	
Canidae <i>Canis latrans</i>	Dogs coyote
Cervidae <i>Odocoileus hemionus fuliginata</i>	Hoofed southern mule deer
Felidae <i>Felis rufus</i>	Cats bobcat
Leporidae <i>Sylvilagus audubonii</i>	Hares and Rabbits desert (Audubon) cottontail
Muridae <i>Neotoma sp.</i>	Mice and Rats woodrat
Procyonidae <i>Procyon lotor psora</i>	Raccoons raccoon
Sciuridae <i>Otospermophilus beecheyi nudipes</i>	Squirrels California ground squirrel
*Non-native species SSC=Species of Special Concern	

5.2 Sensitive Biological Resources

Sensitive biological resources generally include the following: (1) vegetation communities or habitat types that are unique, of relatively limited distribution, or of particular value to wildlife; and (2) species and other resources that have been given special recognition by federal or state agencies, and/or are included in the MSCP due to limited, declining, or threatened populations or extent of occurrence.

Sensitive biological resources determined to occur or have a potential to occur in the study area are described below in terms of sensitive natural communities, jurisdictional waters and wetlands, and special status species.

5.2.1 Sensitive Natural Communities

As presented in Section 5.1.2 (Vegetation Communities), the following seven sensitive natural communities occur in the study area: coast live oak woodland, Engelmann oak woodland, eucalyptus woodland, southern willow scrub, coastal sage scrub, southern mixed chaparral, and non-native grassland.

5.2.2 Jurisdictional Waters and Wetlands

Thirteen U.S. Army Corps of Engineers (USACE) jurisdictional features, all identified as non-wetland waters of the U.S. (ephemeral drainages), were mapped within the study area. No jurisdictional wetlands were observed. The study area consists of a 100-foot wide buffer, that includes 50-foot linear buffers on each side of the canal and each side of the proposed pipeline (refer to map tiles in the Wetland Delineation Report). These features are unvegetated ephemeral channels that occupy a total of 0.05 acre (2,170 square feet). The Wetland Delineation Report provides an acreage summary and resources are listed as potentially jurisdictional until verified by the USACE (Atkins 2016b).

No discharge of dredged or fill material into waters of the U.S. is permitted unless authorized under a Department of the Army Permit. Additionally, a total 0.01 acre of waters of the State including unvegetated channels occur within the study area. Therefore, no activity is permitted unless authorized by the USACE, CDFW, and San Diego Regional Water Quality Control Board (RWQCB).

5.2.3 Special Status Species

Special Status Animal Species

Special status animal species are those listed as threatened or endangered, proposed for listing, or candidates for listing by the USFWS (2016) or CDFW (2016c) or animal species of special concern (SSC) listed by CDFW (2015c).

Table 3 presents a list of special status species with the potential to occur in the study area. Suitable LBVI riparian vegetation and a small patch of CAGN suitable coastal sage scrub (Diegan) occurs adjacent to the canal and South Canal Road in the study area and within 500 feet of the study area. Therefore, protocol surveys for CAGN and LBVI were conducted (Atkins 2016c, 2016d). No CAGN or LBVI were documented in the riparian and coastal sage scrub survey areas during protocol surveys (Atkins 2016c, 2016d).

Five special status animal species were observed during 2016 surveys, including one reptile and five birds. Two Belding's orange-throated whiptails (*Aspidoscelis hyperythrus beldingi*) were observed near the canal. Western bluebird (*Sialia mexicana*) was observed in the southern portion of the study area. A cooper's hawk (*Accipiter cooperii*) was observed near the canal in dense coast live oak woodland. A red-shouldered hawk (*Buteo lineatus*) was observed during numerous surveys near North Canal Road. A number of turkey vultures (*Cathartes aura*) were observed soaring over the study area during multiple surveys. A golden eagle was observed during a prior survey (Black & Veatch 2010).

Special Status Plant Species

Special-status plant species are those that: are federally listed as threatened or endangered by the USFWS (2016); are state listed as threatened or endangered or considered sensitive by the CDFW (2016b, 2016c); are CNPS California Rare Plant Rank List 1A, 1B, or 2 species recognized in the CNPS's Inventory of Rare and Endangered Vascular Plants of California (CNPS 2016), as consistent with California Environmental Quality Act guidelines.

Two rare plants were documented within and adjacent to the study area, Engelmann oak and peninsular spineflower (*Chorizanthe leptotheca*).

Engelmann oaks are distributed along the Escondido Canal within the study area. Most occurrences (more than 50%) are of an individual tree, and the largest group of trees observed was a group of 10. Overall, 106 mature trees and two young trees were observed within the study area during rare plant surveys. These survey data indicate that Engelmann oak woodlands are rare in the study area and the surrounding area.

No spineflowers were found located within the study area during vegetation surveys. Six specimens were identified outside of, but very near, the northern portion of the study area, with the closest specimen located approximately 10 feet from the edge of the official study area. Figures are included in the Rare Plant Report (Atkins 2016a).

Table 3 Special Status Animal Species Known or with Potential to Occur in the Study Area

Species	Status ⁽¹⁾	General Habitat Description	Occurrence
Invertebrates			
Harbison's dun skipper <i>Euphys vestris harbisoni</i>	--/-- County Group 1	Riparian habitats and chaparral with narrow canyons or drainages, where perennial sources of water provide adequate habitat for larval foodplant, San Diego sedge (<i>Carex spissa</i>).	Low Potential
Monarch butterfly <i>Danaus plexippus</i>	FS/-- County Group 2	Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), nectar and water sources nearby. Larval host plants consist of milkweeds (<i>Asclepias</i> sp.).	Moderate Potential
Amphibians			
Arroyo toad <i>Anaxyrus californicus</i>	FE/SSC County Group 1	Breeds in slow-moving streams within open-canopy riparian habitats. May be found in upland scrub habitats adjacent to these areas.	Low Potential
Western spadefoot toad <i>Spea hammondi</i>	BLMS/SSC County Group 2	Occurs in coastal sage scrub, chaparral, and grassland. Important habitat components include temporary pools for breeding, which do not occur on site.	Moderate Potential
Reptiles			
Belding's orange-throated ⁽²⁾ whiptail <i>Aspidoscelis hyperythrus beldingi</i>	FS/WL County Group 2	Occurs in coastal sage scrub and chaparral, particularly washes and other sandy areas with patches of brush and rocks for cover.	Occurs
Blainsville's horned lizard <i>Phrynosoma coronatum blainvillei</i>	BLMS/SSC County Group 2	Frequents a variety of habitats from sage scrub and chaparral to coniferous and broadleaf woodlands. Habitat requirements include open areas for sunning, bushes for cover, fine loose soil for rapid burial, and native ant species such as harvester ants (<i>Pogonomyrmex</i> sp.).	Moderate Potential
Coast patch-nosed snake <i>Salvadora hexalepis virgultea</i>	--/SSC County Group 2	Brushy or shrubby vegetation in coastal southern California.	Low Potential
Coastal rosy boa <i>Charina trivirgata roseofusca</i>	--/-- County Group 2	Occurs among rocky outcrops in coastal sage scrub, chaparral, and desert scrub.	Low Potential
Coastal western whiptail <i>Aspidoscelis tigris stejnegeri</i>	--/SSC County Group 2	Open coastal sage scrub, chaparral, and woodlands, frequently along edges of dirt roads traversing its habitats. Important habitat components include open, sunny areas, shrub cover with accumulated leaf litter, and an abundance of invertebrate prey, particularly termites.	Low Potential
Red diamond rattlesnake <i>Crotalus ruber</i>	FS/SSC County Group 2	Found in chaparral, woodland, grassland, and desert areas from coastal San Diego County to the eastern slopes of the mountains.	Low Potential
San Diego banded Gecko <i>Coleonyx variegatus abbotti</i>	--/SSC County Group 1	Chaparral and coastal sage scrub in areas with rock Outcrops.	Low Potential
San Diego ring necked snake <i>Diadophis punctatus similis</i>	FS/-- County Group 2	Generally occurs in moist habitats such as oak woodlands and canyon bottoms, but is also sometimes encountered in grassland, chaparral, and coastal sage scrub.	Moderate Potential
Silvery legless lizard <i>Anniella pulchra</i>	--/SSC County Group 2	Requires loose soil for burrowing (sand, loam, or leaf mold), moisture, warmth, and plant cover.	Moderate Potential
South coast garter snake <i>Thamnophis sirtalis</i> ssp. <i>novum</i>	--/SSC County Group 2	Found in North County watersheds. Prefers riparian areas with willows and mule fat.	Moderate Potential
Two-striped garter snake <i>Thamnophis hammondi</i>	BLMS/SSC County Group 1	Found in or near permanent fresh water and often along streams with rocky beds and riparian growth.	Moderate Potential

Table 3 Special Status Animal Species Known or with Potential to Occur in the Study Area

Species	Status ⁽¹⁾	General Habitat Description	Occurrence
Birds			
Bell's sage sparrow <i>Artemisospiza belli</i>	BCC/WL County Group 1	Nests in chaparral dominated by fairly dense stands of chamise. Found in coastal sage scrub in south of range.	Moderate Potential
Coastal California gnatcatcher <i>Poliophtila californica</i>	FT/SSC County Group 1	Low, coastal sage scrub in arid washes, on mesas, and on slopes.	Low Potential
Cooper's hawk ⁽²⁾ <i>Accipiter cooperii</i>	Nesting: --/WL County Group 1	Tends to inhabit lowland riparian areas and oak woodlands in proximity to suitable foraging areas, such as scrublands or fields.	Occurs
Golden eagle ⁽³⁾ <i>Aquila chrysaetos</i>	Nesting and wintering: BCC; BLMS/SSC; WL; County Group 1	Forages in grassy and open, shrubby habitats. Nests most often on cliffs, less often in trees. Tends to require places of solitude and is usually found at a distance from human habitation.	Occurs
Grasshopper sparrow <i>Ammodramus savannarum</i>	Nesting: --/SSC County Group 1	Grassland, preferably ungrazed or not mowed.	Low Potential
Least Bell's vireo <i>Vireo bellii pusillus</i>	Nesting: FE/SE County Group 1	Summer resident of southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft.	Low Potential
Loggerhead shrike <i>Lanius ludovicianus</i>	BCC/SSC County Group 1	Grassland, open sage scrub, chaparral, and desert scrub.	Moderate Potential
Red-shouldered hawk ⁽²⁾ <i>Buteo lineatus</i>	--/-- County Group 1	Riparian woodland, oak woodland, orchards, eucalyptus groves, or other areas with tall trees.	Occurs
Southern California rufous-crowned sparrow <i>Aimophila ruficeps canescens</i>	WL County Group 1	Found in coastal sage scrub and sparse mixed chaparral.	Moderate Potential
Tri-colored blackbird <i>Agelaius tricolor</i>	Nesting: BCC; BLMS/SSC County Group 1	Marsh habitat near grasslands, pastures, and agricultural fields.	Low Potential
Turkey vulture ⁽²⁾ <i>Cathartes aura</i>	--/-- County Group 1	Foraging habitat includes most open habitats with breeding occurring in crevices among boulders.	Occurs
Western bluebird ⁽²⁾ <i>Sialia mexicana</i>	--/-- County Group 2	Montane coniferous and oak woodlands.	Occurs
White-tailed kite <i>Elanus leucurus</i>	Fully Protected County Group 1	Riparian woodlands and oak or sycamore groves adjacent to grassland.	Moderate Potential
Yellow warbler <i>Setophaga petechia</i>	Nesting: BCC/SSC County Group 2	Breed in shrubby thickets and woods, particularly along watercourses and in wetlands. Common trees include willows, alders, and cottonwoods across N. America and up to about 9,000 feet in the West.	Moderate Potential
Yellow-breasted chat <i>Icteria virens</i>	--/SSC County Group 1	Mature riparian woodland.	Low Potential
Mammals			
Dulzura (California) pocket mouse <i>Chaetodipus californicus femoralis</i>	--/SSC County Group 2	Primarily associated with mature chaparral. Species, however, has been trapped in mule fat scrub and is known to occur in coastal sage scrub.	Moderate Potential
Mountain lion <i>Felis concolor</i>	--/-- County Group 2	Generally semi-arid, mountainous terrain, subtropical and tropical forests, and swamps.	Moderate Potential
Pallid bat <i>Antrozous pallidus pacificus</i>	BLMS/SSC County Group 2	Roosts in caves, mines, bridges, crevices, abandoned buildings, and trees.	Moderate Potential

Table 3 Special Status Animal Species Known or with Potential to Occur in the Study Area

Species	Status ⁽¹⁾	General Habitat Description	Occurrence
San Diego black-tailed jackrabbit <i>Lepus californicus bennettii</i>	--/SSC County Group 2	Occurs primarily in open habitats, including open coastal sage scrub, chaparral, grasslands, croplands, and disturbed areas (if at least some shrub cover is present).	Moderate Potential
Stephens' kangaroo rat <i>Dipodomys stephensi</i>	FE/ST County Group 1	Sparsely vegetated habitats of sagebrush or annual grasses.	Low Potential
Western Red Bat <i>Lasiurus blossevillii</i>	--/SSC County Group 2	Usually found among dense foliage, in forests and wooded areas. Sometimes hibernates in tree hollows or woodpecker holes.	Moderate Potential

⁽¹⁾ **Federal Status** – FE = Federally Endangered; FT = Federally Threatened; FC = Candidate for federal listing; FD = Delisted; FPE = Federally proposed for listing as Endangered; FPT = Federally proposed for listing as Threatened; FPD = Federally proposed for delisting; BLMS = Sensitive (Bureau of Land Management); BCC = Bird of Conservation Concern (USFWS)
State Status – SE = State Endangered; ST = State Threatened; SCE = State candidate for listing as Endangered; SCT = State candidate for listing as Threatened; SCD = State candidate for delisting; SFP = State Fully Protected; SSC = State Species of Special Concern; WL = State Watch List

County of San Diego Status – **County Group 1** = animal species that have a very high level of sensitivity, either because they are listed as threatened or endangered or because they have very specific natural history requirements that must be met. **County Group 2** = animal species that are becoming less common, but are not yet so rare that extirpation or extinction is imminent without immediate action.

These species tend to be prolific within their suitable habitat types.

⁽²⁾ **Bold** were observed by Atkins biologists during 2016 surveys

⁽³⁾ A golden eagle was observed during a prior survey (Black & Veatch 2010).

Sources: CDFW 2016a; CDFW 2016c; SANDAG 2016; County of San Diego 2010; USFWS 2016

6.0 Impact Analysis

6.1 Special Status Species

Would the proposed project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulation, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Based on the 2016 surveys two special status plant species and seven special status wildlife species were documented in or adjacent to the study area. A list of other special status animal species with the potential to occur in the study area is presented in Table 3. A table of other special status plant species with the potential to occur in the study area is presented in the Rare Plant Report (Atkins 2016a). Additional special status species may be documented prior to or during construction. A qualified biologist would be on site to conduct pre-construction surveys and biological monitoring. If construction occurs after May 2017, additional sensitive species surveys would need to be conducted.

The proposed project could occur on and/or in the immediate vicinity of an undeveloped area that may support special status plant and wildlife species, and thus could result in potentially significant direct and/or indirect impacts to special status-species and their habitats. Direct impacts may include the direct take, removal, or displacement of special status species and their habitats through activities such as clearing, grubbing, grading, excavation, and other land disturbance activities. Removal of habitat could result in displacement of special status wildlife and less habitat available within a species' range to carry out vital life history requirements such as breeding, foraging, dispersal, migration, aestivation (i.e., underground dormancy or torpor during the summer) and predator evasion. Special status species could be inadvertently killed, trapped, trampled, or otherwise harmed by construction activities. These potential direct impacts would be considered significant.

In addition, the proposed project could occur on or in the immediate vicinity of areas that contain trees, shrubs, and man-made structures (e.g., buildings) that provide suitable nesting habitat for a variety of bird species, including raptors, protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game (CFG) Code. Construction activities could result in the removal or trimming of trees and shrubs during the general bird nesting season (February 1 through August 31) or raptor nesting season (January 15 through July 31). Direct impacts could occur as a result of removal of vegetation supporting an active nest. These potential direct impacts would be considered significant in violation of the MBTA and CFG Code.

Potential short-term, construction-related indirect impacts resulting from construction of the proposed project may occur adjacent to special status species and their habitats. Potential indirect impacts to special status-species and their habitats could include those resulting from stormwater runoff from construction sites and fugitive dust. However, in compliance with the National Pollution Discharge Elimination System (NPDES) Construction General Permit, the proposed action components would implement best management practices (BMPs) during construction, which would prevent significant indirect impacts associated with stormwater runoff from construction sites. In addition, compliance with San Diego Air Pollution Control District Rule 55 for Fugitive Dust Control would prevent significant indirect impacts associated with fugitive dust.

Potential indirect impacts to sensitive species and their habitats could also include those resulting from inadvertent intrusions, and noise. Construction activities could result in inadvertent intrusions of construction equipment and workers from construction zones adjacent to sensitive habitats that may support sensitive species. In addition, construction activities could result in temporary increases in noise levels that could adversely affect special status birds and raptors, including listed species that use adjacent habitats for nesting and foraging. These potential indirect impacts would be considered significant.

Implementation of the mitigation measures in Section 7 would reduce potential direct and indirect impacts to special status species and their habitats to a less than significant level.

6.2 Sensitive Natural Communities

Would the proposed project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

According to Section 5.2.1 (Sensitive Natural Communities), the study area includes the following sensitive vegetation communities: coast live oak woodland, Engelmann oak woodland, eucalyptus woodland, southern willow scrub, coastal sage scrub (Diegan), southern mixed chaparral, and non-native grassland. Table 4 includes the maximum temporary vegetation impacts from pipeline construction within the entire 100-foot wide construction corridor. The permanent ROW easement would be 30-feet wide.

Prior to excavation of the pipeline trench, vegetation within the 100-foot wide construction corridor would be scraped and stockpiled. After excavation and pipeline installation, the pipeline trench would be backfilled and covered with native soil. The disturbed area would then be revegetated with the vegetation that was salvaged in order to restore the area. In addition, the disturbed areas would be reseeded with a native seed mix.

Table 4 Maximum Temporary Impacts from Pipeline Construction

Vegetation Communities	100-foot wide Construction Corridor (acres)
Woodlands	
Coast Live Oak Woodland	2.66
Engelmann Oak Woodland	0.27
Eucalyptus Woodland	0.41
Subtotal	3.34
Riparian	
Southern Willow Scrub	0.22
Shrublands	
Coastal Sage Scrub (Diegan)	0.23
Southern Mixed Chaparral	3.31
Subtotal	3.54
Grasslands	
Non-native Grassland	2.73
Disturbed/Developed	
Agriculture	1.25
Ornamental	1.18
Disturbed	4.67
Developed	7.71
Subtotal	14.81
Total	24.65

Table 5 presents potential temporary and permanent impacts to vegetation from construction of the On-Reservation Desilting Basin and access road as part of the proposed project. Permanent impacts include the desilting basin and a 12-foot wide access road. Temporary impacts include a 50-foot buffer around the basin and access road.

Table 5 Potential Temporary and Permanent Impacts from Construction of the On-Reservation Desilting Basin and Access Road (Proposed Project)

Vegetation Communities	Acreage		Total Area
	Temporary Impacts	Permanent Impact	
Shrublands			
Coastal Sage Scrub (Diegan)	0.40	0	0.40
Southern Mixed Chaparral	0.66	0.22	0.88
Subtotal	1.06	0.22	1.28
Disturbed/Developed			
Disturbed	0.30	0.05	0.35
Developed	0.56	0.16	0.62
Subtotal	0.86	0.21	1.07
Total	1.92	0.43	2.35

Table 6 presents potential temporary and permanent impacts to vegetation from the construction of Off-Reservation Desilting Basin Alternative and access road.

Table 6 Potential Temporary and Permanent Impacts from Construction of Off-Reservation Desilting Basin Alternative and Access Road

Vegetation Communities	Acreage		Total Area
	Temporary Impacts	Permanent Impact	
Shrublands			
Coastal Sage Scrub (Diegan)	-	-	-
Southern Mixed Chaparral	2.39	0.41	2.80
Subtotal	2.39	0.41	2.80
Disturbed/Developed			
Disturbed	-	-	-
Developed	0.19	0.15	0.34
Subtotal	0.19	0.15	0.34
Total	2.58	0.56	3.14

The proposed project components are expected to occur on and/or in the immediate vicinity of an undeveloped area that may support riparian habitat and other sensitive natural communities, and thus could result in potentially significant direct and/or indirect impacts to riparian habitat and other sensitive natural communities. Direct impacts include the direct removal or disturbance of riparian habitat and other sensitive natural communities through activities such as clearing, grubbing, grading, excavation, and other land disturbance activities. Within the 100-foot wide corridor, temporary impacts from pipeline construction are anticipated to affect up to 3.34 acres of woodland, 0.22 acre of riparian habitat, 3.54 acres of shrubland, and 2.73 acres of non-native grassland. The largest area temporarily impacted by pipeline construction consists of 14.81 acres of disturbed and developed habitat (Table 4). Construction of the On-Reservation Desilting Basin and access road as part of the proposed project is anticipated to temporarily impact 0.40 and 0.66 acre of coastal sage scrub and southern mixed chaparral, respectively and permanently impact approximately 0.22 acre of southern mixed chaparral (Table 5). Habitat loss or disturbance as a consequence of construction activities could result in diminishing and degrading of open space areas, reductions or eliminations of habitat functions and values, and impacts to species, among other adverse impacts. These potential direct impacts would be considered significant.

Potential short-term, construction-related indirect impacts resulting from construction of the proposed project may occur adjacent to riparian habitat and other sensitive natural communities. Potential indirect impacts to riparian habitat and other sensitive natural communities would be the same as those for special status species and their habitats. As discussed above in Section 4.1, these potential indirect impacts would be considered significant.

Implementation of the mitigation measures in Section 7 would reduce potential direct and indirect impacts to riparian habitat and other sensitive natural communities to a less than significant level.

6.3 Wetlands

Would the proposed action have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

According to Table 3 (Potential Jurisdictional Resources within the Study Area included in Appendix D to this EA) (Atkins 2016b), thirteen small, narrow surface water features were mapped within the study area that occupy an area of 0.05 acre. These surface water features would likely fall under the regulatory jurisdiction of the USACE, RWQCB, and/or CDFW.

The proposed project components could occur on and/or in the immediate vicinity of jurisdictional waters, and thus could result in potentially significant direct and/or indirect impacts to jurisdictional waters or wetlands. Therefore, activities associated with construction of the proposed project could be subject to the regulatory jurisdiction of the USACE, RWQCB, and/or CDFW. Direct impacts include those that pertain to the direct fill, dredge, or discharge into jurisdictional waters and wetlands through activities such as clearing, grubbing, grading, and other land disturbance activities; construction access and staging; and removal and replacement of existing facilities. These potential direct impacts would be considered significant.

Potential short-term, construction-related indirect impacts resulting from construction of the proposed project may occur adjacent to jurisdictional waters and wetlands. Potential indirect impacts to jurisdictional waters and wetlands would be the same as those for special status species and their habitats. As discussed above in Section 6.1, these indirect impacts would be considered significant.

Implementation of the mitigation measures in Section 7 would reduce potential direct and indirect impacts to jurisdictional waters and wetlands to a less than significant level.

6.4 Wildlife Corridors

Would the proposed project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

A wildlife movement corridor is defined as a patch of wildlife habitat which joins two or more larger areas of wildlife habitat. The proposed pipeline alignment is not considered to be located within a wildlife movement corridor. Further, construction of the proposed pipeline would be temporary and would not permanently impede animal movement. Additionally, the end result of the proposed project would be an underground pipeline which would not impede wildlife movement. Therefore, the proposed project would not impede wildlife movement, because the proposed project is not located in a wildlife movement corridor, proposed project construction would be temporary, and the final result of the proposed project would be an underground pipeline.

6.5 Habitat Conservation Plans & Local Policies or Ordinances

Would the proposed project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Would the proposed project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

The County's Resource Protection Ordinance (San Diego County Code of Regulatory Ordinances Sections 86.601 – 86.608) protects sensitive lands and prevents their degradation and loss by requiring a Resource Protection Study for certain discretionary projects within areas of the unincorporated County. Resources protected under the County's Resource Protection Ordinance include wetlands and sensitive habitat lands, among others. As discussed above, the proposed project components could result in potentially significant impacts to wetlands and sensitive habitats.

Implementation of mitigation measures described below would reduce potential impacts to a less than significant level. Therefore, the proposed action would not conflict with the County's Resource Protection Ordinance.

The study area, excluding the San Pasqual Reservation, lies within the boundaries of the Draft North County Multiple Species Conservation Program; however, the North County MSCP has not been finalized and adopted. Thus, implementation of the proposed project would not conflict with any local policies, ordinances, nor with the provisions of an approved Habitat Conservation Plan, Natural Community Conservation Plan, or other local, regional, or state habitat conservation plans.

7.0 Mitigation, Monitoring, and Reporting

Implementation of the following mitigation measures would reduce potential direct and indirect impacts to special status species and their habitats, sensitive natural communities, and jurisdictional waters and wetlands to a less than significant level.

Bio-1 Project-Level Biological Resource Surveys. During the design phase and prior to the construction of the proposed project, the project proponent shall retain a qualified biologist to conduct and/or update project-level biological resources surveys and prepare biological resources technical reports.

- a. If the rare plant surveys or focused protocol-level surveys determine the presence of federally or state-listed endangered or threatened species and occupied habitat on site, then, in compliance with the federal ESA and the CESA, the project proponent shall consult and obtain all applicable regulatory permits and authorizations from the USFWS and CDFW, and the conditions of the regulatory permits and authorizations shall be implemented accordingly and/or the underlying project would be modified to avoid direct "take" of the species and/or minimize adverse impacts to the species and occupied habitat.
- b. For construction activities after the month of May 2017 a CAGN protocol-level presence/absence survey shall be conducted in suitable sage scrub habitat within 500 feet of the project impact area. Prior to conducting surveys, the required notice of intent to conduct surveys shall be filed with the USFWS, and surveys must be conducted by a qualified biologist who holds the appropriate Section 10(a)(1)(A) permit. The CAGN surveys shall follow the 1997 USFWS CAGN Presence/Absence Survey Guidelines (USFWS 1997) which includes six surveys at least one week apart if conducted during the breeding season survey period (February 15 through August 30). If surveys are conducted outside the breeding season, nine surveys at least two weeks apart shall be conducted.

Surveys shall occur between 6:00 a.m. and 12:00 p.m. and avoid periods of excessive or abnormal heat, wind, rain, fog, or other inclement weather. If surveys document absence of CAGN, no additional avoidance or minimization measures are required.

If surveys document the presence of CAGN, impacts to CAGN would be mitigated below the level of significance when occupied coastal sage scrub is fenced, direct impacts are avoided, and construction within 500 feet of occupied habitat occurs only between September 1 and February 15 to avoid indirect impacts to nesting CAGN. If avoidance is not feasible, a temporary noise barrier shall be used during construction, at the appropriate location(s), in

coordination with CDFW and the USFWS. The noise barrier shall attenuate noise levels to 60 dBA or less at the edge of breeding habitat.

Construction work performed within 500 feet of habitat identified for CAGN during the period of February 15 to August 30 shall be monitored at least weekly by a qualified biologist. Monthly monitoring letter reports of construction activities and their impacts on biological resources shall be provided to USFWS and/or CDFW.

- c. For construction activities which occur after June 2017, and during the breeding season for the LBVI (March 15 through September 15), protocol-level surveys shall be conducted prior to construction in suitable riparian habitat within 500 feet of the project impact area. The LBVI surveys shall follow the 2001 USFWS LBVI Survey Guidelines (USFWS 2001) and include eight surveys at least ten days apart within the protocol survey period (April 10 through July 31). Surveys shall be conducted between dawn and 11:00 a.m. and avoid periods of excessive or abnormal heat, wind, rain, fog, or other inclement weather.

If surveys document absence of LBVI, no additional avoidance or minimization measures are required. However, if surveys document the presence of LBVI, impacts to LBVI would be mitigated below the level of significance when occupied riparian habitat is fenced, direct impacts are avoided, and construction within 500 feet of occupied habitat occurs only between September 15 and March 15 to avoid indirect impacts to nesting LBVI. If avoidance is not feasible, a temporary noise barrier shall be used during construction, at the appropriate location(s), in coordination with CDFW and the USFWS. The noise barrier shall attenuate noise levels to 60 dBA or less at the edge of the breeding habitat. Construction work performed within 500 feet of occupied LBVI habitat during the period of March 15 to September 15 shall be monitored at least weekly by a qualified biologist. Monthly monitoring letter reports of construction activities and their impacts on biological resources shall be provided to USFWS and/or CDFW.

Bio-2 Avoidance of Nesting Birds. To prevent impacts to nesting passerines (songbirds) and other non-raptors protected under the federal MBTA and CFG Code, the project proponent shall enforce the following:

- a. If construction occurs during the general nesting season (February 1 through August 31), and where any mature tree, shrub, or structure capable of supporting a bird nest occurs within 300 feet of proposed project construction activities, the project proponent shall retain a qualified biologist to conduct a pre-construction survey for nesting birds prior to clearing, grading and/or construction activities. The survey will be conducted within 72 hours prior to the start of construction.
- b. If any nesting birds are present on or within 300 feet of the proposed project construction activities, the following shall be required, as approved by the USFWS and/or CDFW:
 1. The project proponent shall retain a qualified biologist to flag and demarcate the location of all nesting birds and monitor construction activities. Temporary avoidance of active bird nests, including the enforcement of an avoidance buffer of 300 feet, as determined by the qualified biological monitor, shall be required until the qualified biological monitor has verified that the young have fledged or the nest has otherwise become inactive. Requests for buffer reductions of less than 300 feet shall be provided to the USFWS and/or CDFW. Documentation of the nesting bird surveys and any follow-up monitoring

shall be provided to the USFWS and CDFW within 10 days of completing the final survey or monitoring event.

Bio-3 Avoidance of Nesting Raptors. To prevent impacts to nesting raptors protected under the federal MBTA and CFG Code, the project proponent shall enforce the following:

- a. If construction occurs during the raptor nesting season (January 15 through July 31), and where any mature tree or structure capable of supporting a raptor nest occurs within 500 feet of proposed project construction activities, the project proponent shall retain a qualified biologist to conduct a pre-construction survey for nesting raptors prior to clearing, grading and/or construction activities. The survey will be conducted within 72 hours prior to the start of construction.
- b. If any nesting raptors are present on or within 500 feet of the proposed project construction activities, the following shall be required, as approved by the USFWS and/or CDFW:
 1. The project proponent shall retain a qualified biologist to flag and demarcate the location of all nesting raptors and monitor construction activities. Temporary avoidance of active raptor nests, including the enforcement of an avoidance buffer of 500 feet will be required until the qualified biological monitor has verified that the young have fledged or the nest has otherwise become inactive. Documentation of the raptor surveys and any follow-up monitoring, as necessary, will be provided to the USFWS and CDFW within 10 days of completing the final survey or monitoring event.
- c. In the event that a California State fully protected species (e.g., white tailed kite) is found to be nesting on the project site, all work in the area will stop and the project proponent shall notify the CDFW and/or USFWS. No impacts will be permitted to occur to fully protected species.

Bio-4 Construction Fencing. Prior to vegetation clearing, grading, and/or construction activities for each proposed project component, the project proponent shall retain a qualified biologist to oversee and monitor installation of appropriate fencing and/or flagging to delineate the limits of construction and the approved construction staging areas for protection of sensitive resources identified through project-level surveys (conducted pursuant to mitigation measure Bio-1). Temporary fencing (with silt barriers) shall be installed at the limits of project impacts (including construction staging areas and access routes) to prevent additional sensitive habitat impacts and the spread of silt from the construction zone into adjacent habitats to be avoided. Fencing shall be installed in a manner that does not impact habitats to be avoided. For projects potentially affecting special status species and sensitive resources, and for which permits or approvals from the USFWS or CDFW require confirmation of project impacts and submittal of as-built plans, the project proponent shall submit to the USFWS and CDFW for approval, at least 30 days prior to initiating project impacts, the final plans for initial clearing and grubbing of sensitive habitat and project construction. These plans shall also be submitted to the USACE, RWQCB, or other local agency, from which, approval or permitting is required, as applicable. The final plans shall include photographs that show the fenced limits of impact and all sensitive areas to be impacted or avoided. If work occurs beyond the fenced or demarcated limits of impact, all work shall cease until the problem has been remedied to the satisfaction of the qualified biologist, project proponent, USFWS, CDFW, USACE, and/or other agency. Upon project completion, temporary construction fencing shall be removed by the project proponent under the oversight of the qualified biologist.

- Bio-5 **Construction Staging Areas.** Prior to construction of the proposed project components where it has been demonstrated through project-level surveys (conducted pursuant to mitigation measure Bio-1) that drainages, wetlands and areas supporting sensitive habitats or species could be affected by project construction, the project proponent shall setback construction staging areas to avoid drainages, wetlands, and areas supporting sensitive habitats or species, where feasible. Fueling of equipment shall occur in designated fueling zones within the construction staging areas. All equipment used within the approved construction limits shall be maintained to minimize and control fluid and grease leaks. Provisions to contain and clean up unintentional fuel, oil, fluid and grease leaks/spills shall be included in construction documents and in place prior to construction.
- Bio-6 **Pre-Construction Meeting.** Prior to vegetation clearing, grading, and/or construction activities for each proposed project component, the project proponent shall retain a qualified biologist to attend a pre-construction meeting to inform construction crews of the sensitive species and habitats for that particular project component.
- Bio-7 **Construction-Related Noise.** Construction noise created during the general avian breeding season (January 15 to September 15) that could affect the breeding of the CAGN, migratory songbirds, and other bird species associated with adjacent undeveloped areas shall be avoided. No loud construction noise (exceeding 60 dBA hourly average, adjusted for ambient noise levels, at the nesting site) may take place within 500 feet of active nesting sites during the general breeding season (January 15 through September 15). If it is confirmed through project-level surveys (conducted pursuant to mitigation measure Bio-1) that a proposed project component could result in construction-related noise impacts to breeding birds during the general breeding season, the project proponent shall retain a qualified biologist to monitor the construction operations. The biological monitor shall be present to monitor construction activities that occur adjacent to undeveloped open space areas potentially supporting breeding birds. The biological monitor shall verify that construction noise levels do not exceed 60 dBA hourly average and shall have the ability to halt construction work, if necessary, and confer with the project proponent, USFWS, and/or CDFW to ensure the proper implementation of additional protection measures during construction. The qualified biologist shall report any violation to the USFWS and/or CDFW within 24 hours of its occurrence.
- Bio-8 **Hydroseeding of Graded Areas.** Unless otherwise required by the USFWS, USACE, RWQCB, and/or CDFW, after completion of final grading for each proposed project component located adjacent to native vegetation, construction documents shall require that all graded areas within 100 feet of native vegetation, excluding those areas where a permanent access road, path, or other permanent development is required, are hydroseeded and/or planted with native plant species similar in composition to the adjacent undisturbed vegetation communities. The project proponent shall retain a qualified biologist to monitor these activities to ensure non-native or invasive plant species are not used in the hydroseed mix or planting palettes. The hydroseeded/planted areas shall be watered via a temporary drip irrigation system or watering truck. Irrigation shall cease after successful plant establishment and growth, to be determined by the biologist. Any irrigation runoff from hydroseeded/planted areas shall be directed away from adjacent native vegetation communities and contained and/or treated within the development footprint of individual component projects. All planting stock shall be inspected for exotic invertebrate pests (e.g., argentine ants) and any stock found to be infested with such pests shall not be allowed to be used in the hydroseeded/planted areas.

Bio-9 **Habitat Replacement.** Unavoidable impacts to sensitive natural communities shall be mitigated by the project proponent according to the range of ratios provided below, and would be increased or decreased depending on whether the habitat supports special status species or other sensitive resources, and/or the impacts and mitigation would occur inside or outside an existing preserve area:

<u>Sensitive Natural Community</u>	<u>Mitigation Ratio</u>
Southern Willow Scrub	3:1
Coast Live Oak Woodland	2:1 – 3:1
Engelmann Oak Woodland	2:1 – 3:1
Southern Coast Live Oak Riparian Forest	3:1
Diegan Coastal Sage Scrub	1:1 – 3:1
Southern Mixed Chaparral	0.5:1 – 3:1
Non-Native Grassland	0:1 – 0.5:1
Other Wetlands	3:1

Permanent and temporary impacts to sensitive natural communities shall be mitigated in-kind by the project proponent through implementation of any one or combination of the following measures, as approved and/or amended by the USFWS, USACE, RWQCB, and/or CDFW for individual component projects, if applicable:

- a. On site as creation of new habitat within avoided and preserved areas at the project site;
- b. On site as restoration of existing habitat within temporary impact areas and/or avoided and preserved areas at the project site;
- c. On site as enhancement of existing habitat within avoided and preserved areas at the project site;
- d. Off site as purchase of habitat credits within an approved mitigation bank or combination of banks (e.g., North County Habitat Bank);
- e. Off site as habitat preservation, creation, restoration, and/or enhancement within other properties or approved mitigation programs available at the time of grading; or
- f. A combination of the above.

For on-site or off-site creation, restoration, and/or enhancement mitigation of upland sensitive natural communities (e.g., grassland, coastal sage scrub, chaparral, woodland) for each individual project component, the project proponent shall prepare an Upland Habitat Restoration Plan, Habitat Mitigation and Monitoring Plan, or similar plan, detailing the specific upland habitat creation, restoration, and/or enhancement measures to be implemented as project mitigation. The Upland Habitat Restoration Plan shall be approved by the USFWS and/or CDFW, as appropriate, prior to vegetation clearing, grading, and/or construction activities.

For on-site or off-site creation, restoration, and/or enhancement mitigation of riparian and wetland sensitive natural communities (e.g., riparian forest, riparian scrub, willow scrub, mule fat scrub, freshwater marsh) for each individual project component, the project proponent shall prepare a Riparian/Wetland Habitat Restoration Plan, Habitat Mitigation and Monitoring Plan, or similar plan, detailing the specific riparian/wetland creation, restoration, and/or enhancement measures to be implemented as project mitigation. The Riparian/Wetland Habitat Restoration Plan shall be approved by the USFWS, USACE, RWQCB, and/or CDFW, as appropriate, prior to vegetation clearing, grading, and/or construction activities.

In addition, for on-site preservation, restoration and/or enhancement mitigation required as part of the reclamation of the land occupied by the replaced canal, a specific Engelmann Oak Preservation and Canal Restoration Plan will be prepared by the project proponent. The dominant vegetation communities that make up the current canal section includes coast live oak woodland containing Engelmann oak trees and southern mixed chaparral. This plan shall detail the specific canal restoration, and/or enhancement measures to be implemented as part of project mitigation. The plan shall provide an implementation schedule including site preparation methods, an irrigation plan, non-native plant removal, planting specifications, as well as detailed maintenance and monitoring/reporting schedules, as necessary. The Engelmann Oak Preservation and Canal Restoration Plan shall require approval by the USFWS and/or CDFW, as appropriate, prior to any vegetation clearing, grading, and/or construction activities.

Any upland or riparian/wetland habitat impacts that occur beyond the approved work limits of any project (see mitigation measure Bio-5) shall be mitigated at a ratio to be negotiated with the USFWS, USACE, RWQCB, and/or CDFW.

Bio-10 Jurisdictional Delineation. Where it has been confirmed through jurisdictional delineation that jurisdictional waters or wetlands would be impacted by the proposed project, the project proponent shall obtain the required federal and state permits from the USACE, RWQCB, and/or CDFW, pursuant to Sections 404 and 401 of the CWA, and Section 1600 et seq. of the CFG Code, respectively. In compliance with permit requirements, the project proponent shall mitigate the loss of jurisdictional waters or wetlands through implementation of the in-kind habitat replacement identified in mitigation measure Bio-9, unless otherwise conditioned by the USACE, RWQCB, and/or CDFW in the federal and state permits.

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